

ChatGPT and generative artificial intelligence: an exploratory study of key benefits and challenges in operations and supply chain management

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Abstract

ChatGPT and generative artificial intelligence (Gen-AI) are transforming firms and supply chains. However, the empirical literature reporting the benefits, challenges, and outlook of these nascent technologies in operations and supply chain management (OSCM) is limited. This study surveys current projects and perceptions of these technologies in US (n = 119) and UK (n = 181) supply chains. We found that projects range from proof-of-concept to full implementation, with a main focus on operational gains, such as improved customer satisfaction, cost minimisation, and process efficiencies. The main challenges concern data, technological and organisational issues. Expected benefits are dominated by cost savings and enhanced customer experience, but also include increased automation and sustainability. Industries were found to cluster around six groups according to perceived benefits and implementation challenges. Our findings contribute to the emerging literature on Gen-AI use in OSCM, and to management practice by mapping the benefits, challenges, outlook, and maturity level of Gen-AI projects in supply chains.